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10/815,232	03/31/2004	Sankaran Narayanan	307568.01/MSFTI122176	9746

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EXAMINER	
CHU, WUTCHUNG	

ART UNIT	PAPER NUMBER
2619	

NOTIFICATION DATE	DELIVERY MODE
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	Application No. 10/815,232	Applicant(s) NARAYANAN ET AL.	
	Examiner Wutchung Chu	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-14, 16-17, 20-23, 25-32, and 34-39 is/are rejected.
- 7) ☒ Claim(s) 7, 15, 18, 19, 24 and 33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>See Continuation Sheet</u> | 6) <input type="checkbox"/> Other: _____  |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :31 March 2004;  
12/5/2005, 1/12/2006, 5/15/2006.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 101*

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 25-31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claims 25-31, the claim is "computer program" per se is not a "physical thing" and does not fall into one of the four statutory classes of invention: process, machine, manufacture, or composition of matter. The claim is directed to a nonstatutory subject matter because the claims are not written in terms of "computer" readable medium, stored with, embodied with or encoded with a "computer" program or computer executable instructions.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2, 25-29, 30, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Buch et al., hereinafter Buch, (US2003/0217165).

**Regarding claim 1**, Buch discloses end-to-end authentication of session initiation protocol messages using certificates (**see paragraph 5**) comprising:

- (a) receiving a SIP request (**see paragraph 24 invite request message**) at a SIP node (**see paragraph 24 SIP client user/eg., "Ann"**), the SIP request including a message header (**see paragraph 41 header and it is inherent for SIP message to include header**);
- (b) generating a signature based upon at least a portion of the message header (**see paragraph 26**);
- (c) generating a SIP node header entry (**see paragraphs 34 and 41**); and
- (d) inserting the signature into the SIP node header entry (**see paragraphs 42 and 43**).

**Regarding claim 2**, Buch teaches the SIP node header entry is an echoed header (**see paragraphs 23 and 37 response message**).

**Regarding claim 25**, Buch teaches computer readable medium having computer executable steps (**see paragraph 16 and 17**).

**Regarding claim 26**, Buch teaches computer readable medium having computer executable instructions (**see paragraphs 16 and 17**) for performing steps for processing messages in a pool of servers (**see paragraph 24 and 25 caller and callee server**) having a first server and a second server which are constructed and arranged to be interchangeably used to process messages in the same dialog, the steps comprising:

- (a) identifying, at the first server (**see paragraph 25**), a public key (**see paragraph 26**) and a private key (**see paragraph 27**);
- (b) receiving, at the first server, a first message including a first header (**see paragraph 28 receive message and paragraph 34**);
- (c) generating a session key (**see paragraph 28 private-public key**);
- (d) encrypting the session key with the private key (**see paragraph 28**);
- (e) generating, with the public key, a key signature (**see paragraph 28 private-public key**) based on the encrypted session key (**see paragraph 28**);
- (f) inserting the key signature into the first header (**see paragraph 34 and 42**).

**Regarding claim 27**, Buch teaches further comprising:

- (g) identifying, at the second server (**see paragraph 25**), the public key and the private key (**see paragraph 28 private-public key**);
- (h) receiving, at the second server, a second message including a second header, the second header comprising the key signature (**see paragraph 28**);
- (i) decrypting the key signature to determine the session key (**see paragraph 28**).

**Regarding claim 28**, Buch teaches further comprising:

(j) verifying at least a portion of the second message with the session key **(see paragraph 45)**.

**Regarding claim 29**, Buch teaches the first message is a Session Initiation Protocol (SIP) message **(see paragraph 23)**.

**Regarding claim 30**, Buch teaches the first server is a proxy server **(see paragraph 25)**.

**Regarding claim 37**, Buch teaches a method of verifying a Session Initiation Protocol (SIP) message, the method comprising:

(a) receiving a SIP response at a SIP node, the SIP response including a message header **(see paragraph 24 and 36)**;

(b) identifying an echoed header in the message header **(see paragraph 24 generate a response to request, and it is inherent for a response message to include a header)**;

(c) extracting a received signature from the echoed header **(see paragraph 26)**;

(d) generating a verification signature based upon at least a portion of the message header **(see paragraph 28)**;

(e) comparing the verification signature with the received signature **(see paragraph 28)**.

***Claim Rejections - 35 USC § 103***

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-6, 8-14, 16-17, 20-23, 32, 34-36, and 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bush in view of Tsuzuki et al., hereinafter Tsuzuki, (US2004/0246991).

**Regarding claims 3-6, 8-14, 16-17, and 20-23, Bush teaches:**

- (claim 4) the SIP node header (**see paragraphs 42 and 43**);
- (claim 5) (e) receiving a SIP response at the SIP node in reply to the SIP request (**see paragraph 23**), a first received signature; and (f) verifying the first received signature (**see paragraphs 23 and 26**).



- (claim 6) verifying includes generating a verification signature (**see paragraphs 23 and 26**), the SIP response and comparing the verification signature with the first received signature (**see paragraph 28**).
- (claim 8) generating the signature includes generating a first signature (**see paragraphs 23 and 26**)
- (claim 9) generating the first signature (**see paragraphs 23 and 26**) is
- (claim 10) and generating the first signature includes generating the first signature (**see paragraphs 23 and 26**)
- (claim 11) generating the signature includes generating a second signature (**see paragraph 36 signatures and certificates, and it is inherent that to have a second signature**)
- (claim 12) inserting the signature includes inserting the second signature (**see paragraph 36 signatures and certificates, and it is inherent that to have a second signature**)
- (claim 13) generating the second signature includes generating a second signature
- (claim 14) further comprising: (j) receiving a SIP response in reply to the SIP request (**see paragraph 36**), the SIP response including a response header (**see paragraph 24 response packet**); (k) generating a fourth

signature (see paragraph 36 signatures and certificates, and it is inherent that to have a fourth signature)

- (claim 16) inserting the fourth signature includes inserting the fourth signature (see paragraph 36 signatures and certificates, and it is inherent that to have a fourth signature)
- (claim 17) generating the fourth signature includes generating the fourth signature (see paragraph 36 signatures and certificates, and it is inherent that to have a fourth signature)
- (claim 20) further comprising: and wherein generating the signature includes generating a third signature (see paragraph 36 signatures and certificates, and it is inherent that to have a third signature)
- (claim 21) inserting the third signature includes inserting the third signature (see paragraph 36 signatures and certificates, and it is inherent that to have a third signature)
- (claim 22) inserting the third signature includes inserting the third signature as a header (see paragraph 36 signatures and certificates, and it is inherent that to have a third signature)
- (claim 23) further comprising: (s) receiving a SIP response at the SIP node in reply to the SIP request, the SIP response (see paragraph 36) a third received signature (see paragraph 36 signatures and certificates, and

**it is inherent that to have a third signature); and (t) verifying the third received signature (see paragraph 35).**

Buch disclose all the subject matter of the claimed invention with the exception of:

- (claim 3) the portion of the message header includes data indicative of network routing locations.
- (claim 4) entry is a VIA header.
- (claim 5) the SIP response comprising the VIA header for the SIP node,
- (claim 6) at least one VIA header.
- (claim 8) based upon at least one VIA header of the message header
- (claim 9) based upon at least one VIA header of the message header and at least one of a peer FQDN, a connection identifier of the connection over which the message will be sent on a next hop, at least a portion of a FROM header of the message header, at least a portion of a TO header of the message header, at least a portion of a CALL-ID header of the message header, and at least a portion of a CSeq header of the message header.
- (claim 10) the message header includes a plurality of VIA headers, and based upon the plurality of VIA headers except the VIA header of the SIP node.

- (claim 11) based upon at least a portion of a RECORD-ROUTE header and at least a portion of a CONTACT header of the message header.
- (claim 12) as a URI parameter into a RECORD-ROUTE header of the SIP node.
- (claim 13) based on a URI portion of each RECORD-ROUTE header in the message header except for a RECORD-ROUTE header of the SIP node, and a URI portion of the CONTACT header in the message header.
- (claim 14) based upon a RECORD-ROUTE header and a CONTACT header of the response header; and (I) inserting the fourth signature into a RECORD-ROUTE header of the SIP node of the response.
- (claim 16) as a URI parameter into the RECORD-ROUTE header of the SIP node.
- (claim 17) based upon the URI portions of each RECORD-ROUTE header of the response except for the RECORD-ROUTE header of the SIP node, and a URI portion of the CONTACT header.
- (claim 20) (p) determining a RECORD-ROUTE header of the SIP request; based upon at least a portion of the RECORD-ROUTE header of the SIP request.

- (claim 21) into a RECORD-ROUTE header of the SIP node
- (claim 22) parameter of the RECORD-ROUTE header of the SIP node.
- (claim 23) comprising the RECORD-ROUTE header for the SIP node  
which includes

Tsuzuki from the same or similar fields of endeavor teaches the use of the URI and the port number of the originating-side terminal 5A are designated by the VIA header indicative of a message path (**see Tsuzuki paragraph 104**), and more than one VIA headers (**see Tsuzuki figure 21**), To header, From header, Call ID, and CSeq (**see Tsuzuki paragraph 104 and figure 15**), via headers (**see Tsuzuki figure 14 as correspond to claim 10**) the URI and the port number of the originating-side terminal, and destination ID (**see Tsuzuki paragraph 104 as correspond to RECORD-ROUTE and CONTACT**), and URI portion in the invite packet (**see Tsuzuki figure 14 as correspond to claim 13**). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the VIA headers as taught by Tsuzuki in the end-to-end authentication of session initiation protocol messages using certificates of Buch in order to prevent request looping and ensure replies take the same path as the requests.

**Regarding claims 32, 34-36**, Buch teaches computer readable medium having stored thereon a data structure (**see paragraphs 16 and 17**) representing a Session Initiation Protocol (SIP) request (**see paragraph 23**), the data structure comprising:

- a plurality of SIP headers (**see paragraph 39 headers**) comprising an echoed header (**see paragraph 23 and 37 response message**) including an address of a SIP node in a route for the SIP request (**see paragraph 24 and 34**) and data representing a digital signature generated by signing a portion of the SIP headers with a session key (**see paragraph 26**), wherein the echoed header,
- (claim 34) the plurality of SIP headers (**see paragraph 39 headers**)
- (claim 35) the digital signature (**see paragraph 26**) is
- (claim 36) the digital signature comprises a first signature (**see paragraph 26**) and a second digital signature (**see paragraph 36 signatures and certificates, and it is inherent that to have a second signature**)

and disclose all the subject matter of the claimed invention with the exception of:

- (claim 32) is selected from the group consisting of a VIA header, a FROM header, a TO header, a RECORD-ROUTE header, a CALL-ID header, and a CSeq header.
- (claim 34) comprises a CONTACT header for carrying an address of an endpoint SIP node and a RECORD-ROUTE header for carrying an address of a SIP server, the digital signature being generated based upon at least a portion of the RECORD-ROUTE header.
- (claim 35) generated based upon a URI portion of the RECORD-ROUTE header and a URI portion of the CONTACT header.

- (claim 36) generated based upon at least a portion of a RECORD-ROUTE header, generated based upon at least a portion of the RECORD-ROUTE header and at least a portion of a CONTACT header of the SIP request.

Tsuzuki from the same or similar fields of endeavor teaches the use of the URI and the port number of the originating-side terminal 5A are designated by the VIA header indicative of a message path (**see Tsuzuki paragraph 104**), and more than one VIA headers (**see Tsuzuki figure 21**), To header, From header, Call ID, and CSeq (**see Tsuzuki paragraph 104 and figure 15**), via headers (**see Tsuzuki figure 14 as correspond to claim 10**) the URI and the port number of the originating-side terminal, and destination ID (**see Tsuzuki paragraph 104 as correspond to RECORD-ROUTE and CONTACT**), and URI portion in the invite packet (**see Tsuzuki figure 14 as correspond to claim 13**). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the VIA headers as taught by Tsuzuki in the end-to-end authentication of session initiation protocol messages using certificates of Buch in order to prevent request looping and ensure replies take the same path as the requests.

**Regarding claims 38 and 39**, Buch teaches:

- (claim 38) the echoed header (**see paragraph 24 generate a response to a SIP request**) and

- (claim 39) generating a verification signature includes generating the verification signature **(see paragraph 28)**

and disclose all the subject matter of the claimed invention with the exception of:

- (claim 38) is selected from the group consisting of a VIA header, a FROM header, a TO header, a RECORD-ROUTE header, a CALL-ID header, and a CSeq header.
- (claim 39) based upon at least a portion of at least one of a VIA header, a CONTACT header, a RECORD-ROUTE header, a ROUTE header, a CALL-ID header, and a CSeq header.

Tsuzuki from the same or similar fields of endeavor teaches the use of the URI and the port number of the originating-side terminal 5A are designated by the VIA header indicative of a message path **(see Tsuzuki paragraph 104)**, and more than one VIA headers **(see Tsuzuki figure 21)**, To header, From header, Call ID, and CSeq **(see Tsuzuki paragraph 104 and figure 15)**, via headers **(see Tsuzuki figure 14 as correspond to claim 10)** the URI and the port number of the originating-side terminal, and destination ID **(see Tsuzuki paragraph 104 as correspond to RECORD-ROUTE and CONTACT)**, and URI portion in the invite packet **(see Tsuzuki figure 14 as correspond to claim 13)**. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the VIA headers as taught by Tsuzuki in the end-to-end authentication of session initiation protocol messages using certificates of



Buch in order to prevent request looping and ensure replies take the same path as the requests.

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buch in view of Mueller et al., hereinafter Mueller, (US2004/0258239).

**Regarding claim 31**, Buch teaches encrypting the session key (**see paragraph 27**); and disclose all the subject matter of the claimed invention with the exception of:

- further comprising identifying a time stamp containing data representing a date and time of creation for the session key and appending the time stamp to the session key, wherein encrypting the session key includes and the time stamp.

Mueller from the same or similar fields of endeavor teaches the use of time information is included in the encryption of the authorization information (**see Mueller paragraph 16**). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the time stamp as taught by Mueller in the end-to-end authentication of session initiation protocol messages using certificates of Buch in order to provide increase of security (**see Mueller paragraph 16**).

***Allowable Subject Matter***

8. Claims 7, 15, 18, 19, 24, and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


le el al.(US2003/0105962) Wengrovitz(US20020141404)

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wutchung Chu whose telephone number is 571 270 1411. The examiner can normally be reached on Monday - Friday 1000 - 1500EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan D. Orgad can be reached on 571 272 7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WC/  
Wutchung Chu

  
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